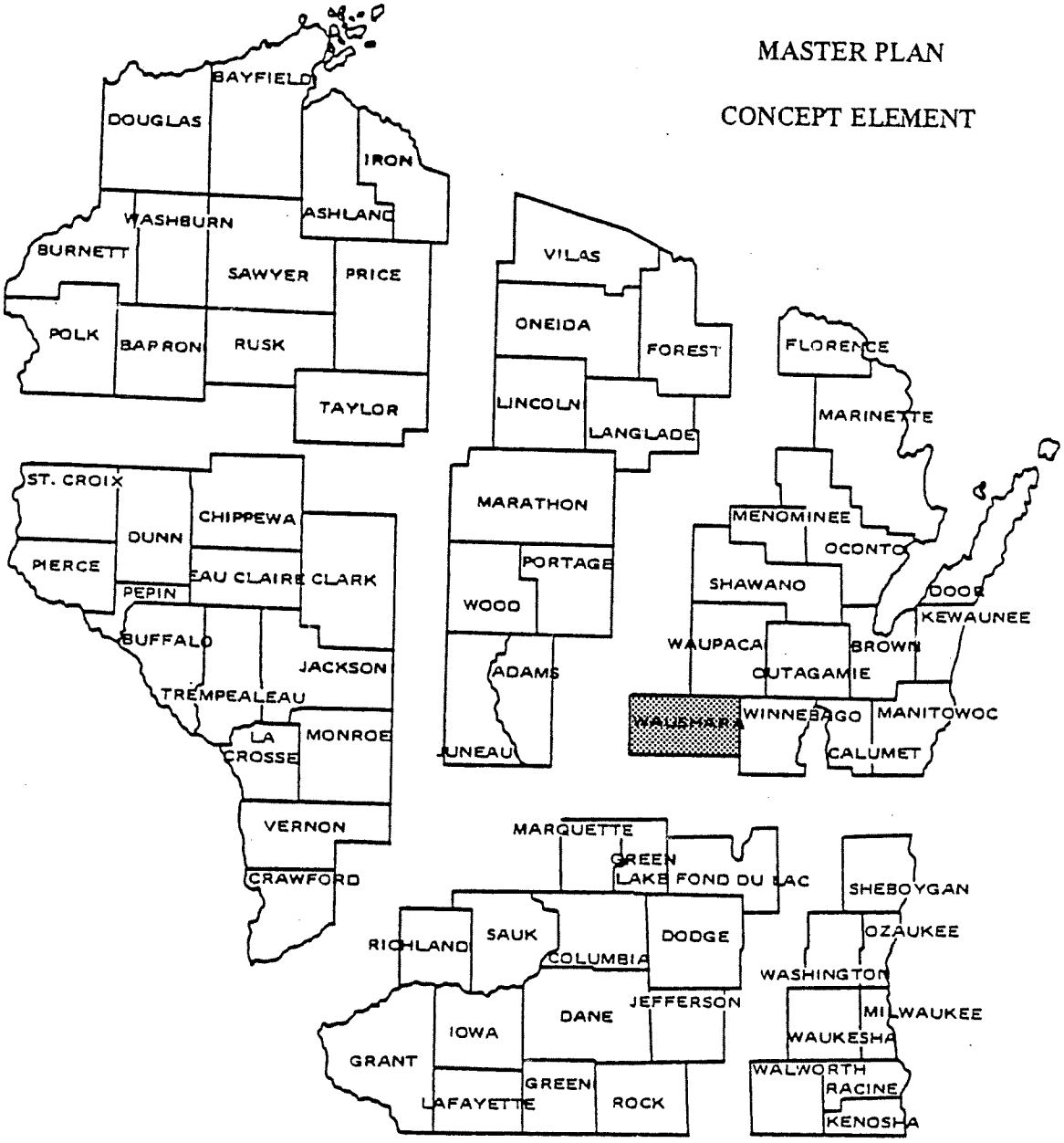
WHITE RIVER SYSTEM FISHERY AREA

WAUSHARA COUNTY

MASTER PLAN

CONCEPT ELEMENT



Property Task Force

Leader –Michael Primising, Fish Manager
Michael Folgert, Forester
Jerry Staehle, Wildlife Technician
Terry Thompson, Fish Technician
Elward Engle, Real Estate Agent

Approved by Natural Resources Board

3-27-86
Date

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
MADISON, WISCONSIN

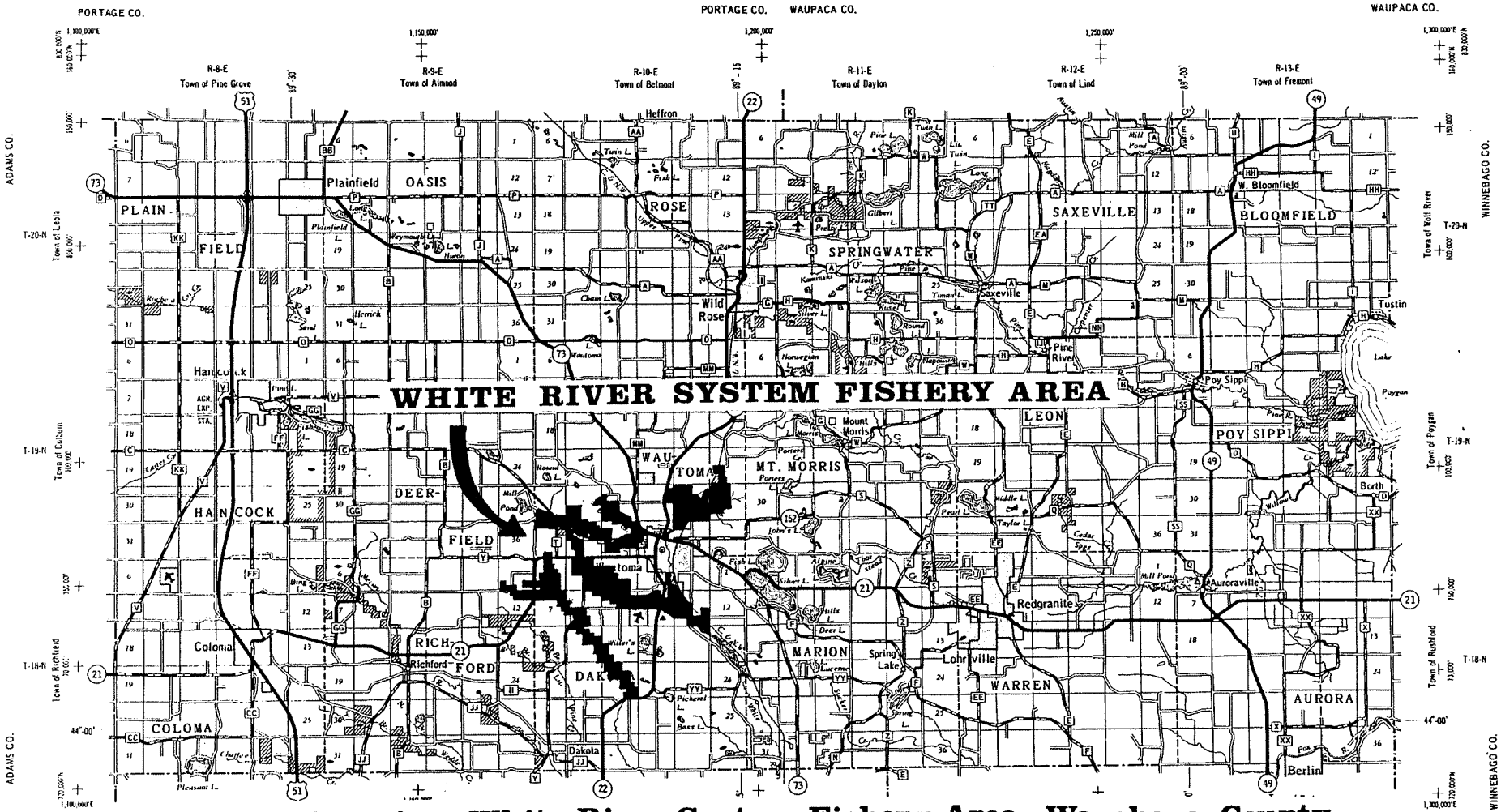


Figure 1. Location–White River System Fishery Area, Waushara County.

MARQUETTE CO.

LEGEND

U.S. & STATE / COUNTY

- Portland Cement or Bitum Concrete
- Bituminous
- Gravel
- Earth
- *Town Road
- Fire Lane
- Multilane Divided
- Freeway
- Interchange
- Highway Separation
- Interstate Highway No.
- U.S. Highway No.
- State Highway No.
- County Hwy. Letter
- Railroad
- Dam
- State Boundary
- County Boundary
- Civil Town Boundary
- Corporate Limits
- Nat. & State Forests
- Airport
- Fish Hatchery
- Game Farm
- County Seat
- Unincorp. Village
- Schools
- Public Hunt. or Fish. Grds.
- Hospital
- Ranger Station
- Public Camp & Picnic Grds.
- State Park — With Campsites / Without Campsites
- County Park — With Facilities / Without Facilities
- Wayside — With Facilities / Without Facilities

*Surface types of town roads not shown

MILES OF HIGHWAY as of Jan. 1, 1975

STATE	124
COUNTY	333
LOCAL ROADS	814
OTHER ROADS	3
TOTAL FOR COUNTY	1284

CIVIL TOWNS

PLAINFIELD	OASIS	ROSE	SPRINGWATER	SAXEVILLE	BLOOMFIELD
HANCOCK	DEERFIELD	WAUTOMA	MOUNT MORRIS	LEON	POY SIPPI
COLOMA	RICHFORD	DAKOTA	MARION	WARREN	AURORA

MARQUETTE CO. GREEN LAKE CO.

DISTRICTS

GREEN LAKE CO.

Land Area ..... 678 Sq. Mi.
Population 14,759
Co. Seat ..... Wautoma

TOWNSHIP NUMBERING

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Grid based on Wisconsin coordinate system, south-central zones

WAUSHARA CO.

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OFFICE BUILDING
Madison, Wisconsin

SCALE 0 1 2 MILES

Corrected for
JAN. 1976

Compiled from U.S.G.S. Quadrangles
Based on Aerial Photographs

WAUSHARA 69-4

Table of Contents

SECTION I - ACTIONS

GOALS, OBJECTIVES AND ADDITIONAL BENEFITS

Goals

To manage, preserve, and protect the White River System Fishery Area, Waushara County. To provide multiple benefits and public uses consistent with natural resource capabilities of the area and statutes under which lands are acquired from willing sellers.

Annual Objectives

1. Provide 5,800 angler-days of trout fishing for brook, brown and rainbow trout.

2. Provide 14,500 participant-days of hunting for white-tailed deer, ruffed grouse, cottontail rabbits, gray and fox squirrels, waterfowl, woodcocks, raccoons and foxes, and 3,400 days of trapping for muskrats, beaver, otters and mink.

Annual Additional Benefits

1. Provide 4,000 days of other recreational and educational uses including, picnicking, nature study, field demonstration trips, berry picking, hiking, photography, cross-country skiing, and snowmobiling.

2. Manage productive stands of timber and utilize approximately 75 cords of firewood for home heating consumption through firewood sale permits.

3. Manage approximately 270 acres of widely scattered uplands through share-cropping agreements for the production of agricultural products, for wildlife food patches and nest cover.

4. Enhance water quality through streambank protection and erosion control techniques.

5. Contribute to the habitat of a variety of native, migratory, and nongame species including endangered or threatened flora and fauna.

RECOMMENDED MANAGEMENT AND DEVELOPMENT PROGRAM

The Department proposes to combine the present White River Wildlife Area, West Branch, White River Fishery Area, and Soules Creek Fishery Area with the remnant areas purchased on the tributary Bird, Bowers, Mud and Lunch Creeks, and Dahlke Flowage (Figure 2). If approved, the combined properties will be named the White River System Fishery Area, Waushara County, using the proposed boundaries shown on Figures 3a and 3b.

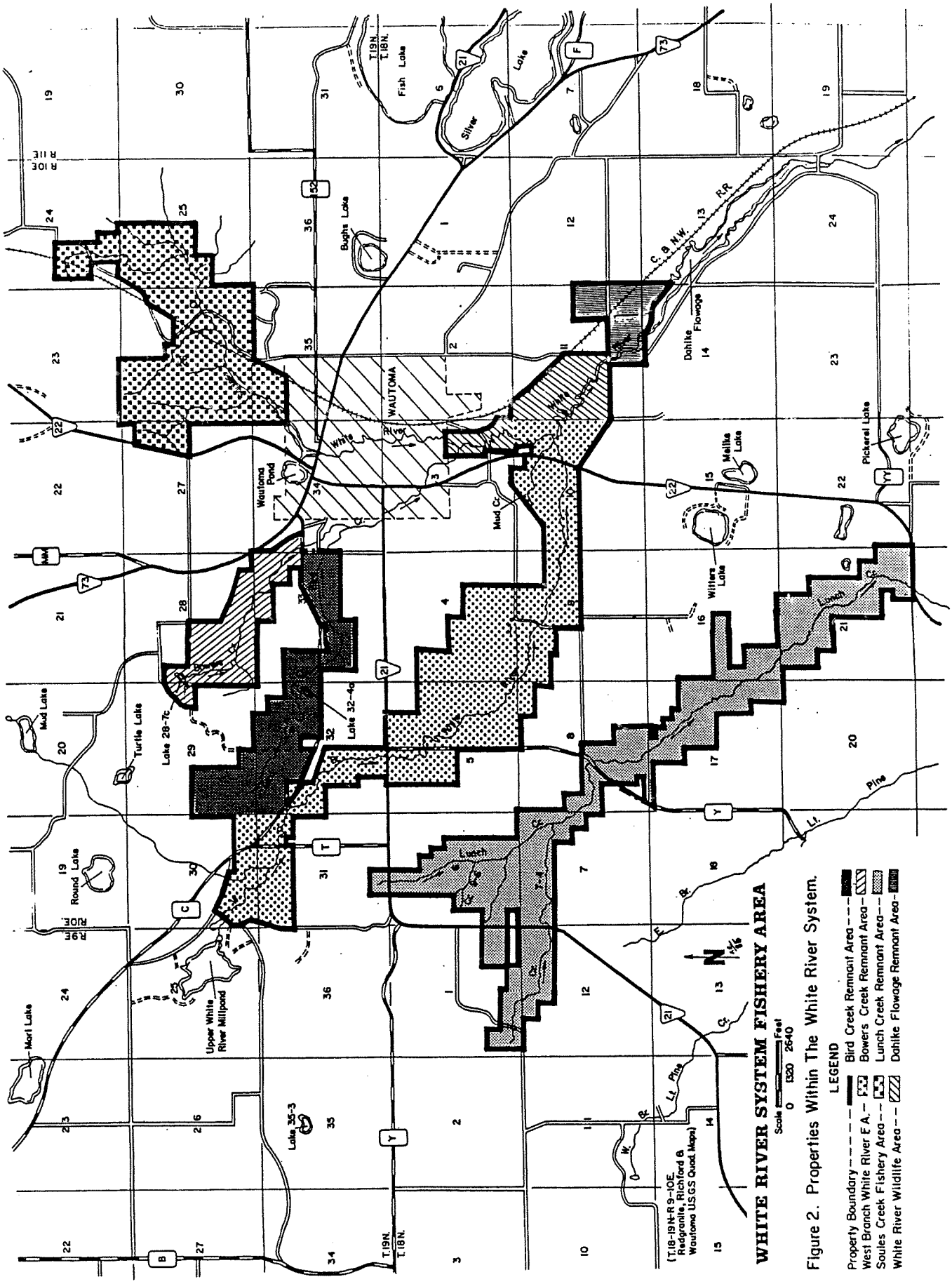
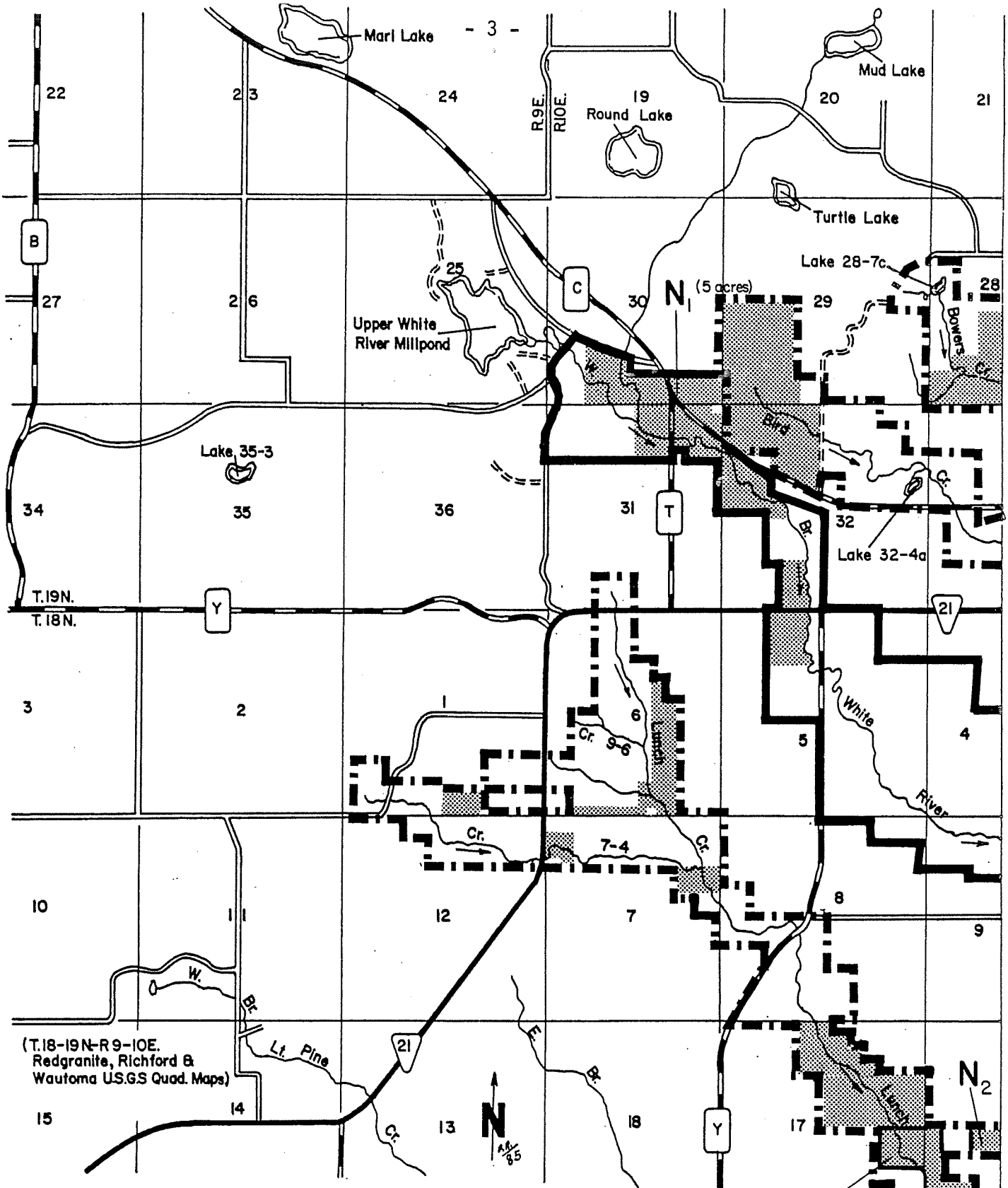


Figure 2. Properties Within The White River System.



WHITE RIVER SYSTEM FISHERY AREA

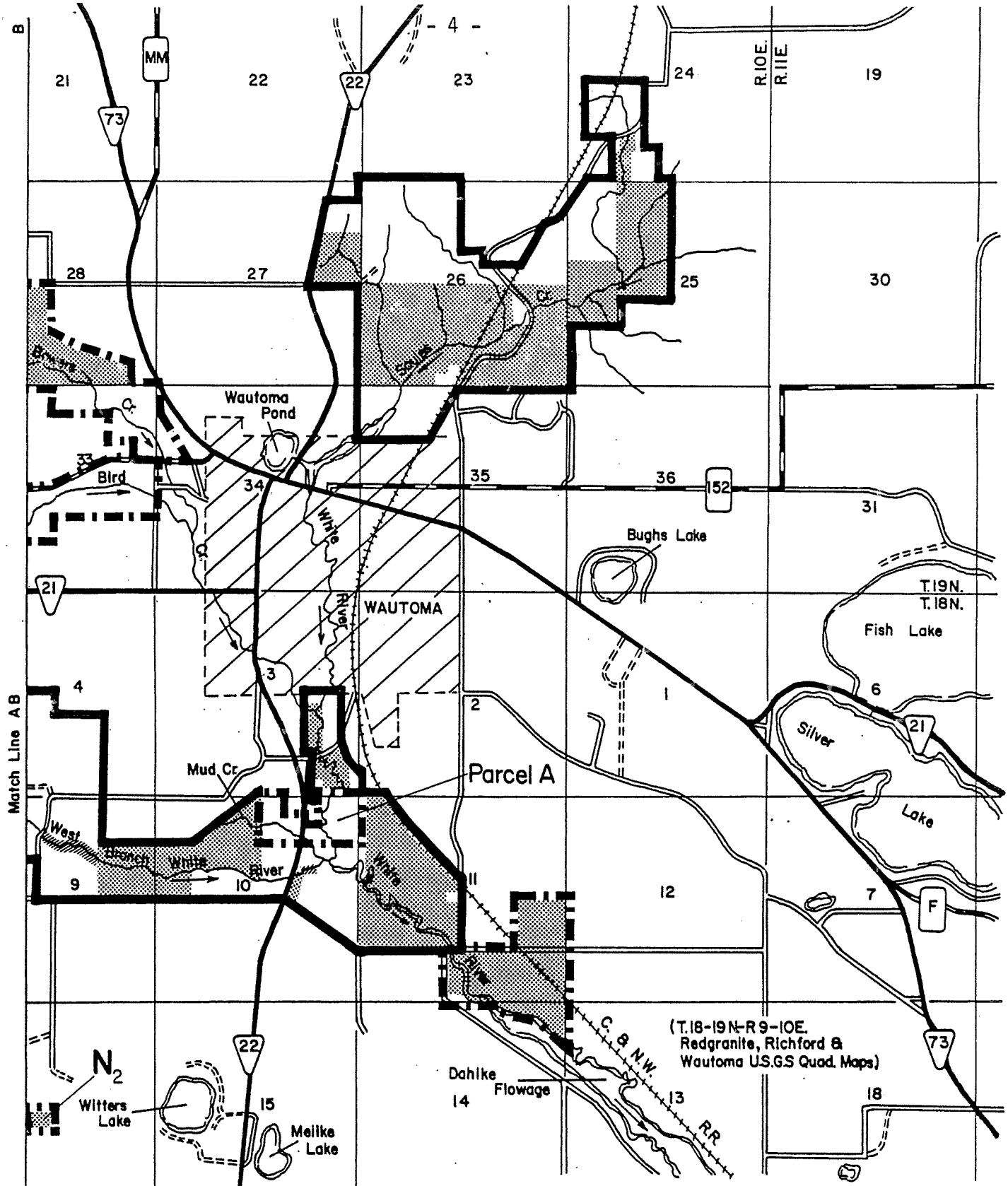
Map 1 of 2 Maps

Scale 0 1320 2640 Feet

Figure 3a. Property Ownership and Land Use Classification Map.

LEGEND

- Present Approved Boundary
- Proposed Boundary Change
- State Land (Fee Title)
- State Easement
- Public Use Natural Area — N
- Private Land
- Fish & Wildl. Mgt. Area — RD_2
- Entire Property — Except N
- Class I Trout Water — Entire Stream



WHITE RIVER SYSTEM FISHERY AREA

Map 2 of 2 Maps

Scale 0 1320 2640 Feet

Figure 3b. Property Ownership and Land Use Classification Map.

LEGEND

- Present Approved Boundary
- Proposed Boundary Change
- State Land (Fee Title)
- State Easement
- Public Use Natural Area — N
- Private Land
- Fish & Wildl. Mgt. Area — RD_2
- Entire Property — Except - N
- Class I Trout Water — Entire Stream

The White River Wildlife Area, West Branch, White River Fishery Area and Soules Creek Fishery Area presently have a combined acreage goal of 1,931.45 acres. To date, 1,326.10 acres have been purchased leaving 605.35 acres remaining to be purchased in these approved areas.

Meanwhile, 658.66 acres have been purchased under Waushara County remnant acres on Bird, Bowers, Mud and Lunch Creeks and Dahlke Flowage and, in order to complete recommended acquisition it is recommended that approval be granted for an increase of 199.89 acres to give the system an overall acreage goal of 2,790 acres.

If the proposals are acceptable to the Natural Resources Board, the following actions are recommended:

1. Reclassify the White River Wildlife Area, the West Branch, White River and Soules Creek Fishery Areas and the remnant areas on Bird, Bowers, Mud and Lunch Creeks and Dahlke Flowage as the White River System Fishery Area.

2. Approve the boundaries shown on Figures 2a and 2b.

3. Transfer 200.1 acres from Wildlife to Fish Management for the White River Wildlife Area and reduce the wildlife acreage goal by a comparable amount.

4. Transfer 658.66 acres from the Waushara County remnant acres to the White River System Fishery Area for lands already acquired.

5. Reduce the Waushara County remnant area acreage goal by 658.66 acres.

6. Transfer 199.89 acres to the White River System Fishery Area to increase the acreage goal.

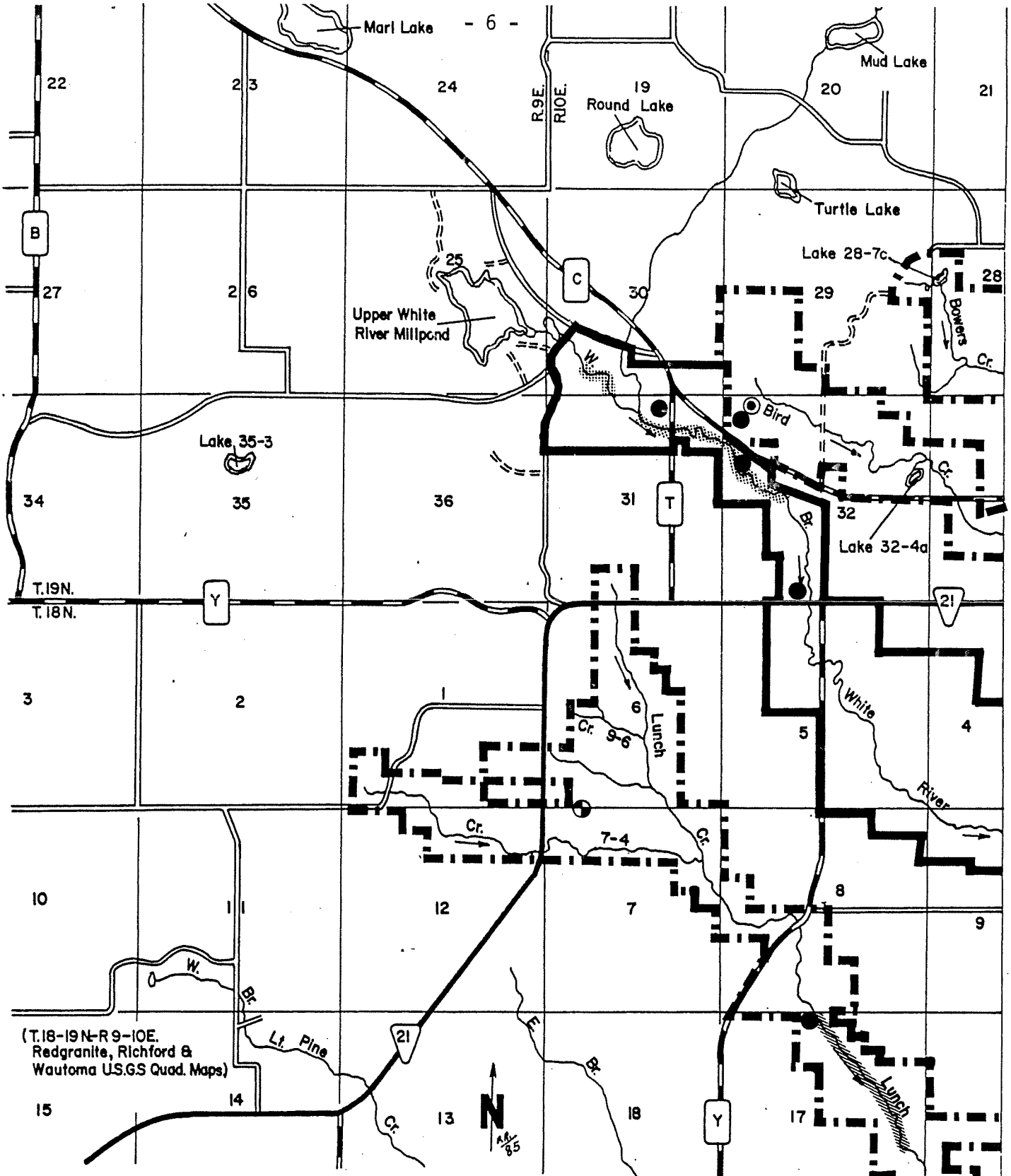
7. Establish the acreage goal of the White River System Fishery Area at 2,790.0 acres.

The estimated cost in 1986 dollars to purchase the remaining 805.24 acres, is $785,000. Acquisition priority will be given to those waters that contain major spawning grounds, nursery areas and spring areas that are the lifeblood of the system. Consideration will also be given to those land parcels that will provide a variety of multiple public uses.

It is recommended that on the next evaluation of the master plan, consideration be given to revising the acreage goal in line with any changing statewide acreage goals that may be necessary to accommodate expanding demands for public recreational areas.

Other than the attachment of the remnant boundaries to the combined wildlife and fishery areas, only one boundary change, an increase, is recommended. It is shown on Figure 3b as Parcel A, and contains a portion of Mud Creek, a feeder stream that supplies high quality spring water to the Main Branch, White River, as well as a very popular fly-fishing section of the Main Branch.

Trout stream habitat development (Figures 4a and 4b) funded with trout stamp monies will play a major role in providing adequate future trout populations



WHITE RIVER SYSTEM FISHERY AREA

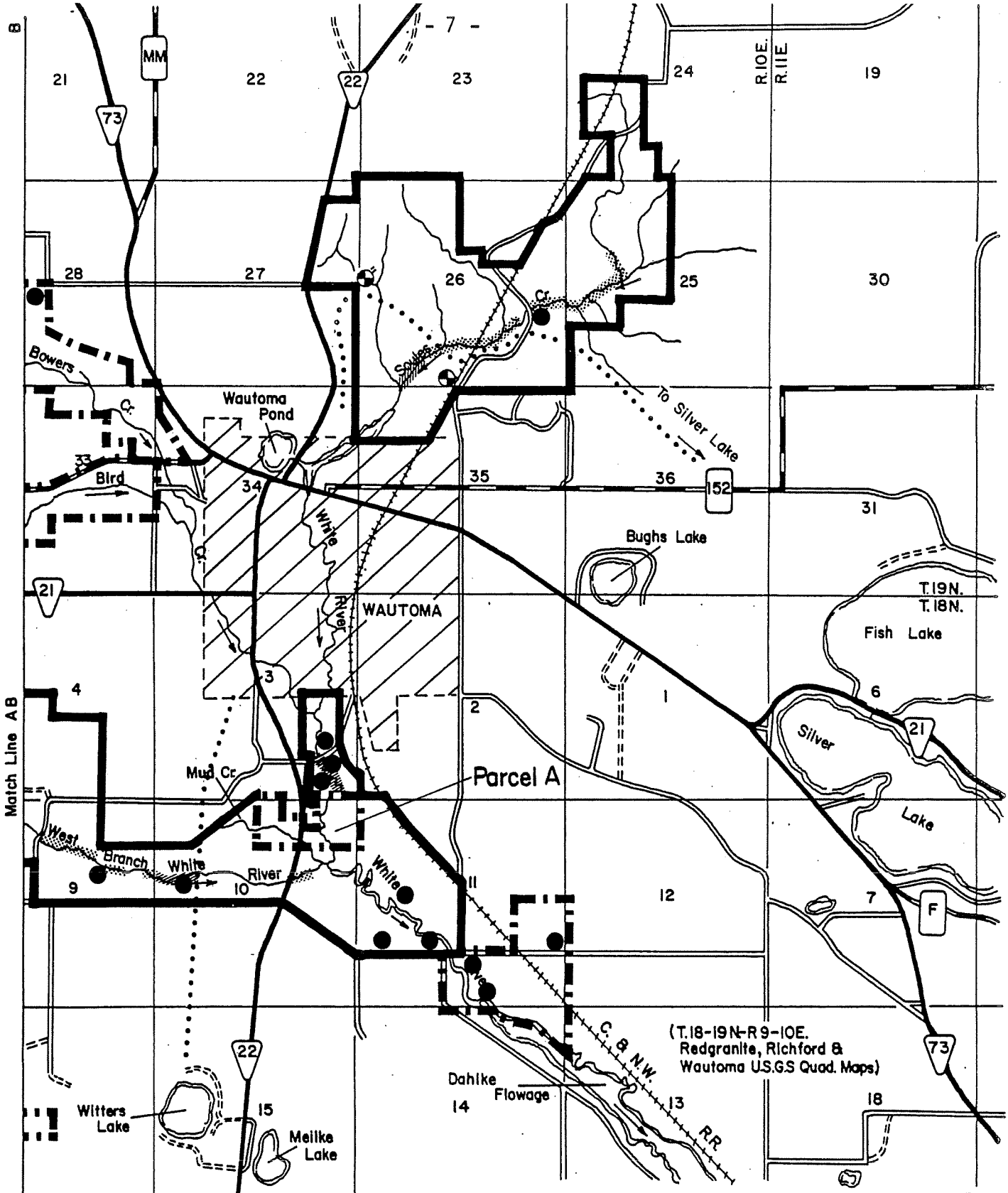
Map I of 2 Maps

Scale Feet
0 1320 2640

Figure 4a. Existing and Planned Development Map.

LEGEND

- Present Approved Boundary
- Proposed Boundary Change
- Existing Parking Area
- Proposed Parking Area
- Existing Stream Hab. Improve.
- Existing Brushing
- Existing County Rifle Range
- Existing Snowmobile



WHITE RIVER SYSTEM FISHERY AREA

Map 2 of 2 Maps

Figure 4b. Existing and Planned Development Map.

LEGEND

- Present Approved Boundary
- Proposed Boundary Change
- Existing Parking Area
- Proposed Parking Area
- Existing Stream Hab. Improve.
- Existing Brushing
- Existing County Rifle Range
- Existing Snowmobile

to offset increased fishing pressure. The last improvement work was done on Soules Creek and the West Branch, White River in 1983. As new properties are acquired, habitat development activities will be expanded based on needs identified by survey practices and evaluation procedures.

Trout Unlimited Chapters have been very active and supportive of stream improvement projects in central Wisconsin. This action organization can be expected to initiate cooperative habitat improvement projects in the future. We welcome this group's dedication and service.

Maintenance activities will be carried out as needed on instream devices presently scattered throughout approximately 4.4 miles of stream, and vegetation management will be continued to encourage open marsh-meadow type growth along the stream edge. The maintenance of property line fences, parking lots and boundary posting will be a continuing program. The estimated annual maintenance cost is $1,900.

The development of accesses will be provided on new land purchases. Presently, 18 parking lots have been provided with 2 new ones proposed (Figures 4a and 4b). Vehicular traffic will be kept to a minimum in an effort to maintain an enjoyable atmosphere for outdoor experience. Estimated cost for each new parking lot is $700.

Wildlife management actions that will be maintained include expanding food and cover by planting, thinning and sharecropping. At this time, 194 acres of land on the system are sharecropped to provide food patches, maintain openings and provide nesting cover. This program is expected to continue.

The oak timber types within the area have considerable defects which include trunk deformities and oak wilt. Occasional timber sales are possible but most commercial use is related to fuelwood sales and salvage operations. Pole timber volumes from 2 to 7 cords per acre and saw timber volumes from 150 to 7,700 board feet per acre with averages of 8 cords per acre and 1,829 board feet per acre, respectively, are anticipated.

Downed timber will be sold under firewood permits for home consumption on a first-come, first-served basis at a current charge of $7.00 per cord. Provisions will be made to keep some of the standing dead trees and snags as den trees, for birds and animals. Some of the oak timber will be utilized for piling and planking materials in the construction of instream devices needed for habitat improvement projects.

Undergrowth in oak types ranges from almost nonexistent in some stands, to good in others, with white pine, cherry, soft maple, oak and hazelbrush being common. Where white pine is present, it will be favored and some underplanting may be done in the future to raise stocking levels.

Swamp hardwood is the major timber type consisting primarily of black ash, soft maple, white birch and some elm and tamarack. These stands are located on poorly drained soils and stand quality is generally poor. Volumes are also poor, averaging 8 cords, and 765 board feet per acre. Some potential exists for limited timber sales and fuelwood cutting operations, but cutting will be confined to the winter months because of the wetness. Understory consists of tag alder, prickly ash, black ash, basswood and scattered yellow birch.

There are 33 acres of pine plantations consisting of red and white pine interspersed with jack pine. All of the plantations are 10 acres or less in size. Where possible, the pine will be managed on even-aged rotations to produce saw-timber with thinnings at periodic intervals throughout the rotation. Some windbreak plantings of pine are also present on the property.

Two snowmobile trails (Figure 3b) will continue to be groomed, posted and maintained by the Cross Snowmobile Association through land-use agreements. Any proposed additions or changes in routes will be weighed against the impact on the resources and compatibility with public interest and uses.

The Department will continue to cooperate with local government and other agencies by providing land-use agreements for special uses that are compatible with the natural resource capabilities of the area.

All lands, with one exception, within the boundary of the fishery system will be open to public fishing, hunting, trapping and educational tours. In addition, cross country skiing and snowshoeing will be allowed, although no established trails will be offered. The exception is a 12.88-acre parcel under perpetual easement in Section 9, T18N, R10E (Figure 2b). Only public fishing rights apply to this parcel.

No overnight camping will be allowed on public lands within the system.

All areas proposed for development or timber harvesting will be examined when money and trained personnel are available for the presence of endangered and threatened animals and plants. If listed species are found, actions will be suspended until the District Endangered Resources Coordinator is consulted, the site evaluated and appropriate protective measures taken.

A complete biological inventory of the property will be conducted as funds permit. Additional property objectives may be developed following completion of such a survey.

SECTION II - SUPPORT DATA
BACKGROUND INFORMATION

The White River System Fishery Area includes some of the choicest trout waters found anywhere in the State of Wisconsin. The streams on this system are renowned for their ability to provide quality trout angling year after year, and the fact that they are among the few trout streams in all of Wisconsin where a naturally reproducing population of rainbow trout exists.

The fishery system is located in central Wisconsin in Waushara County and the streams meander through gently rolling farmlands interspersed with woodlots, pine and Christmas tree plantations.

The Wisconsin Conservation Department, predecessor of the Department of Natural Resources recognized the value of these waters, and land resources, and active acquisition was initiated on the Main Branch of the White River in

1948. At that time, the White River acquisitions were designated as a wildlife area. A property boundary and acreage goal of 200.10 acres was established.

In 1954, the Conservation Commission granted authority to establish a fishery area on an acquisition program of the West Branch of the White River that has a current acreage goal of 981.35 acres. The Conservation Commission also granted authority for an acquisition project on the Soules Creek Fishery Area in 1958, that has a current acreage goal of 750 acres.

In 1961, the Commission established a Waushara County remnant areas acquisition program with a current acreage goal of 3,090.40 acres. Purchases on Bird, Bowers, Mud and Lunch Creeks and Dahlke Flowage have resulted under the remnant acquisition program for a total of 658.66 acres.

The current acreage acquired, and approved acreage goals are:

Property	Acquired Acres	Acreage Goal	Acres Remaining
Soules Creek Fishery Area	490.00	750.00	260.00
White River Wildlife Area	199.27	200.10	0.83
West Br., White River Fishery Area	636.83	981.35	344.52
Bird/Bowers Creeks Remnant	170.94	--	--
Dahlke Flowage Remnant	134.59	--	--
Lunch Creek Remnant	353.13	--	--
Total	1,984.76	1,931.45	605.35

There are currently 10.4 miles of stream in public ownership.

Until 1955, these Class I streams were heavily stocked. In that year, all trout stocked were marked and the streams were electro-fished for the first time to show that hatchery trout survived best where few native trout were present. Since that time, the stocked trout in Class I portions of the streams have been eliminated.

Annual trout stocking on Soules Creek averaged 1,100 fish until 1956; in the West Branch, White River, 950 fish until 1960; the Main Branch, White River, 1,760 fish until 1969; and in Lunch Creek, 1,000 until 1967. Stocking was discontinued as creel census data showed that marked hatchery fish provided a very short-term fishery and natural fish supplied the bulk (90%) of the catch throughout the season.

Instream habitat improvement structures are scattered throughout 23,400 feet of stream. Some of the original instream development work dates back to WPA and CCC camp days of the 1930's, and a few remnant structures from this period can still be found today. The most recent projects on Soules Creek and West Branch, White River were funded under the Trout Stamp program initiated in 1978 and completed in 1983. Streambank vegetation control is scattered

throughout 11,700 feet of stream. Volunteer labor of Trout Unlimited groups has been instrumental in controlling excessive streambank brush and felled trees. Their activities have contributed toward bank stabilization and improved fishability.

Approximately 75,000 stems of wildlife shrubs have been planted that include ninebark, silky and gray dogwood, wild grape, mixed crab, Russian olive, Siberian pea bush and lilac. The greatest success has been with ninebark, mixed crab and wild grape which are the most compatible with soil types.

Presently, sharecropping agreements with local farmers on 194 acres contribute to wildlife food patches for game and nongame species. A total of 25% of the grain crops are left in the fields for winter food patches. In addition, blackwell switchgrass has been seeded on 76 acres to provide dense nesting cover for waterfowl, upland game birds and nongame species.

A total of 18 parking lots have been provided. These are small pull-off areas that accommodate 4-8 vehicles.

The Waushara County Parks office maintains a rifle range within the boundary through a land use permit agreement that provides facilities for sighting-in hunting rifles and provides an area for target shooting enthusiasts.

A windbreak management demonstration area has been established as a cooperative venture between the Department and the local SCS Office.

A cooperative study with the University of Wisconsin is underway on ruffed grouse in central Wisconsin. Much of the grouse trapping, marking and radio transmitter monitoring takes place on public lands within the fishery system.

Occasional field trips are conducted for grade, high school and college ecology, ichthyology and biology classes.

RESOURCE CAPABILITIES AND INVENTORY

Soils, Geology and Hydrology

The soil types range from sand to sandy-loam which are generally light in color, are droughty, and subject to blowing. These soils are only fair for agricultural purposes. However, some areas are highly productive of vegetables, specialty crops and field corn with heavy fertilizing and irrigation.

The watershed topography is nearly level to rolling. The sandy soils readily allow water from precipitation (annually about 30 inches) to percolate into the ground and become part of the groundwater system. This continual recharge to groundwater reserves and downslope movement accounts for the spring flow in, and along the stream, resulting in fairly stable stream flows.

Fish and Wildlife

The fish species composition of the waters of the White River System are characteristic of a coldwater fishery. The principal fish species found

include: brown, brook and rainbow trout, mottled sculpins, hog and common suckers, common and blackchin shiners, johnny and fantail darters, longnose and blacknose dace and creek chubs. A few game and panfish, including largemouth, rock bass and northern pike, are present and probably originate from warmwater lakes and ponds that are in, or drain into, the system.

Soules Creek

A complete electro-fishing survey was made of this stream in 1979. Brown and brook trout were present in the ratio of 2.9:1. Population estimates of yearling and older age trout averaged 121 pounds per acre, 798 trout per acre and 1,664 trout per mile.

West Branch, White River

This stream contains naturally produced brown, rainbow and brook trout. Survey data from 1978 show a population makeup of 82% brown trout, 17.5% rainbow trout and 0.5% brook trout. The stream contained an estimated combined trout population of 681 trout per acre, 133 pounds per acre and 1,781 trout per mile. Special attention should be given to the fact that the West Branch is one of the very few streams in Wisconsin that supports a self-perpetuating population of rainbow trout.

Lunch Creek

Brown trout provide the major sport fishery. The coldwater research unit of the Department is presently studying the response of trout to streambank vegetation control measures in this stream. The latest standing stock figures in the 1.34-mile study area for the period 1981-83 shows this stream is capable of supporting an average of 1,235 trout per acre, 119 pounds per acre and 1,783 trout per mile.

Main Branch, White River

This river is the largest of all waters in the system. It contains the most popular stretch of water for fly fishermen during the late May and June mayfly hatch. An occasional trophy-sized brown trout in the 4-8 pound category is caught during this period. The river compares to other large streams in its trout carrying ability of about 80 trout per acre, 40 pounds per acre and 500 trout per mile. Little natural reproduction takes place in most sections of this river. Trout numbers present are dependent on the downstream drift of yearling-age and older fish from the tributary streams of the system.

Bird and Bowers Creeks

This stream complex contains some of the major spawning areas of the system and also contributes quality, fresh, spring water to the downstream receiving waters of the system. As is the case with the West Branch, some rainbow natural reproduction has been found in Bird and Bowers Creeks. On Bowers Creek, natural reproduction of all 3 major trout species has been documented at the same survey station, a real rarity.

Trout production in the lower reaches are similar to that found in Soules Creek. Brook trout are more prevalent in the upper reaches of the streams.

Mud Creek

A small, extremely high class spring water tributary of the Main Branch, White River. It is not important as a spawning feeder stream because it is heavily silted. However, its water quality is important in maintaining the integrity of the receiving waters of the White River. It contains some young-of-the-year and adult brook trout.

Dahlke Flowage

A large (110 acres), hard-water impoundment on the Main Branch, White River about 4 miles south of Wautoma. The height of the dam creating the impoundment is 23 feet. Fishing in the pond proper is primarily for largemouth bass, panfish and northern pike, although the transition zone between the river and the upper end of the pond holds some large trout in the early part of the trout fishing season, and is a favorite area for fly, bait and spinner fishermen.

Invertebrate insect life is abundant and a diverse mixture of different species of midgefly, caddisfly, stonefly, mayfly and freshwater shrimp are found in all waters of the system. Amphibians sampled on fish surveys include leopard and green frogs. Turtle species documented as present are snapper and painted types.

The major wildlife species present are common to central Wisconsin and include white-tailed deer, fox and gray squirrels, cottontails, woodcock, ruffed grouse, mallards, teal, wood ducks, raccoons, muskrats, foxes, beaver, otters and mink. A variety of nongame birds and animals inhabit the area both seasonally and permanently. Sandhill cranes inhabit low marsh areas in spring and summer and successful nesting activity of this species occurs.

It is recognized that land-use practices such as streambank clearing and forest cuttings produce trade-offs in animal species, with some being helped, some not. These trade-offs will be considered in future land management proposals to minimize harmful effects to game and nongame species.

Vegetative cover

A forest reconnaissance survey of state-owned lands within the boundary of the fishery area was conducted in 1982. Cover types are shown on Table 1 in detail and in general on Figures 5a and 5b, consisting of 1984 acres of which 1,049 can be considered commercial forest lands.

Table 1. 1982 forest reconnaissance cover types on the White River System Fishery Area.

Type	Acres	Percent Grand Total
Oak	389	19.6
Swamp Hardwoods	416	21.0
White Birch	72	3.6
Aspen	14	0.7
Tamarack	29	1.5
Northern Hardwoods	56	2.8
Red (Norway) Pine	23	1.2
Jack Pine	40	2.0
White Pine	10	0.5
Totals	1,049	52.9

Other Types	Acres	Percent Grand Total
Marsh/lowland Brush	496	25.0
Grass and Cropland	439	22.1
Totals	935	47.1
Grand Totals	1,984	100.0

Endangered and Threatened Species

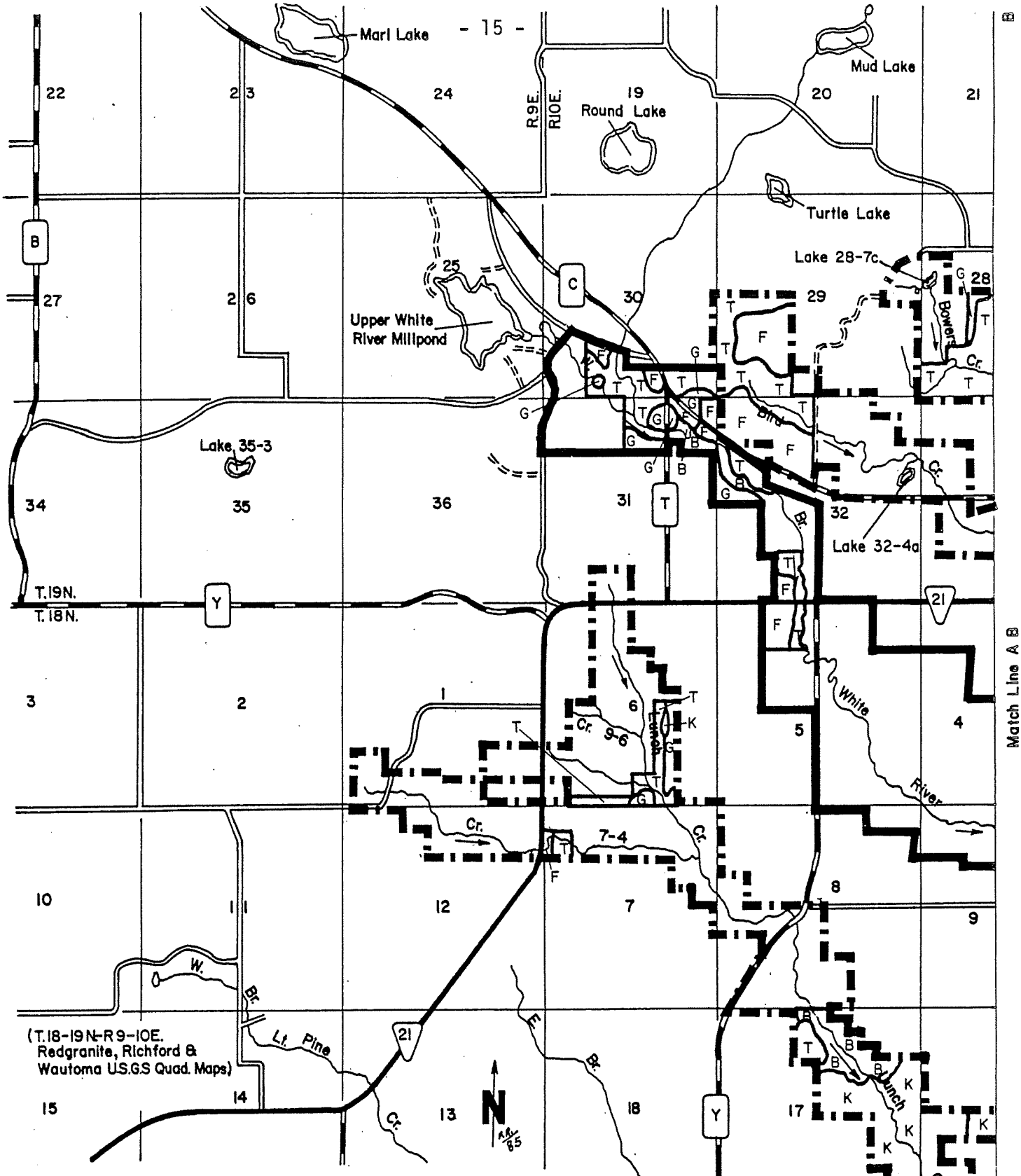
No endangered or threatened species of fish, amphibians, molluscs, mammals, birds, reptiles or wild plants are known to inhabit the area.

Water Resources

The Main Branch of the White River (Figure 2) is the largest stream within the system, and each of the other streams ultimately flows into it on its passage to the Fox River, a major stream of the Lake Michigan watershed. It has a 24-foot average width and a 2.2-foot per mile gradient.

Soules Creek flows into the Wautoma Pond, but the stream flowing from the pond is known as the Main Branch, White River. It flows south and east, picking up the combined Bird and Bowers, Mud and West Branch streams in turn before it flows into Dahlke Flowage. Lunch Creek flows into the Main Branch after it flows from Dahlke Flowage and before it flows into Neshkoro Pond, outside of the fishery area.

Soules Creek is actually the headwaters of the Main Branch of the White River. It originates as a series of spring feeders northeast of the City of Wautoma. It has a 13-foot average width and the lowest gradient of the streams in the fishery system at 1.8 feet per mile.



WHITE RIVER SYSTEM FISHERY AREA

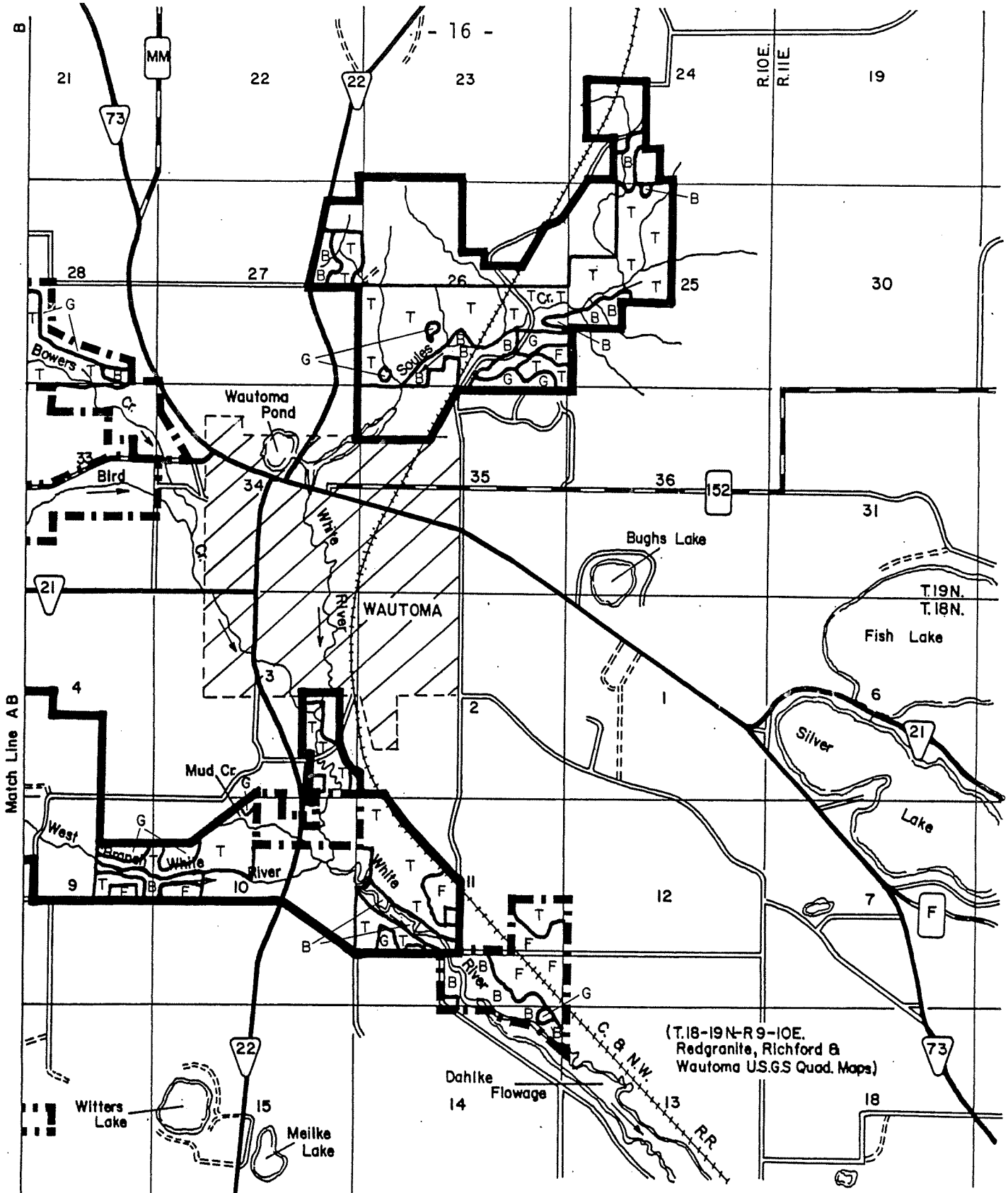
Map 1 of 2 Maps

Scale 0 1320 2640 Feet

Figure 5a. General Cover Map.

LEGEND

Present Approved Boundary ---- Marsh ---------- K
Proposed Boundary Change --- Grassland ---------- G
Timber ---------- T Farmland ---------- F
Brush ---------- B



WHITE RIVER SYSTEM FISHERY AREA

Map 2 of 2 Maps

Scale Feet
0 1320 2640

Figure 5b. General Cover Map.

LEGEND

Present Approved Boundary ---- ■■■
Proposed Boundary Change --- ■■■
Timber ---------- T
Brush ---------- B
Marsh ---------- K
Grassland ---------- G
Farmland ---------- F

Bird Creek originates a few miles west of Wautoma, flows in a southeasterly direction to join the Main Branch, White River just south of the city limits of Wautoma. Significant spring action along its course enhances the quality of the water of this stream and the receiving waters of the White River. It has an 8-foot average width and 4.7-foot per mile gradient.

Bowers Creek originates a couple of miles northwest of Wautoma, flows in a southeasterly direction to join Bird Creek just west of the Wautoma city limits. It has a 6-foot average width and 4.6-foot per mile gradient.

The West Branch, White River originates in an impounded spring area known as Upper White River Millpond. It flows in a south and east direction to join the Main Branch, White River about a mile south of Wautoma. Spring action in and along with upper half of the stream contributes to ideal water temperatures for trout. Gravel bottom riffle areas provide excellent trout spawning areas. It has a 22-foot average width and 5.0-foot per mile gradient.

Lunch Creek originates as a series of 3 spring feeder streams about 4 miles west of Wautoma which then flow south and east out of the county. The upper third of the stream contains the major spawning areas and reproduction and downstream drift of small fish provides a sufficient population of trout making stocking unnecessary. It has an 8-foot average width and 4.9-foot per mile gradient.

The waters of all the streams covered in this master plan (Table 2a) are cool during the summer, clear, alkaline, and conducive to good to excellent trout productivity. All streams in the system are Class 1 trout water. The pH is basic ranging from 7.6 to 8.1 and total alkalinity ranges from 156 to 202 ppm.

Dahlke Flowage (also called the Lower White River Millpond) ends the trout water on the complex of streams forming the White River system. The pond is 2.25 miles long and 0.25-mile wide with a shoreline of 6.0 miles, of which 0.41 mile is in public frontage. The waters of the pond are hard and alkaline, and contain mostly warmwater species of fish.

Two small ponds, Lakes 28-7c and 32-4a of Township 19 North, Range 10 East are on the headwaters of Bowers and Bird Creeks, respectively. Both are alkaline, hardwater ponds which probably contain trout and minnow species.

Information on the flowage and ponds are summarized in Table 2b.

Table 2a. Streams of the White River System Fishery Area - Waushara County.

Stream	Length in Miles Class I	Class II	Surface Acres
Bird Creek	4.3	--	4.20
Bowers Creek	2.8	--	2.00
Lunch Creek	5.3	--	5.10
Mud Creek	0.6	--	0.73
Soules Creek	3.9	--	6.20
White River, Main Br.	2.5	--	7.30
White River, West Br.	7.7	--	20.50
Totals	27.1		46.03

Table 2b. Lakes of the White River System Fishery Area, Waushara County.

Lake	Surface Acres	Maximum Depth (ft)	MPA	pH
Dahlke Flowage	110.00	22.0	164	8.0
Lake 28-7c	0.85	4.5	191	7.8
Lake 32-4a	0.65	9.5	195	7.5
Total	111.50			

Historical, Architectural and Archaeological Features

Based on a recent architectural survey of Waushara County, conducted by the State Historical Society, there are no buildings of significance within the boundaries of the White River System Fishery Area.

No systematic historical or archaeological surveys have been completed in this area, so data on these resources is far from complete. A prehistoric mound group and village have been reported within the boundary and a prehistoric campsite has also been reported just outside of the system. There are probably more sites in the area that remain to be discovered. The exact locations of identified sites will be recorded in the files of the State Historical Society and of the Wautoma Office of the Department of Natural Resources.

Until the system has been adequately surveyed for historical and archaeological sites, the Department of Natural Resources will consult with the Historical Society prior to undertaking any ground disturbing activities in the system.

Ownership

On all properties owned within the proposed fishery area system, 1,971.55 acres have been acquired in fee title and 13.21 acres in perpetual easement for a grand total of 1,984.76 acres. The currently approved White River Wildlife Area, West Branch, White River Fishery Area and the Soules Creek Fishery Area have a combined acreage goal of 1,931.45 acres. To date, 1,326.10 acres have been purchased leaving 605.35 acres remaining to be purchased in these established fishery areas. A total of 658.66 acres have been purchased under the Waushara Country remnant project on Bird/Bowers and Lunch Creeks and Dahlke Flowage.

Currently, the acreage in state ownership on the system is:

Instrument	White River W.L.A.	West Br. F.A.	Soules Creek F.A.	Bird/ Bowers R.A.	Lunch Creek R.A.	Dahlke Flowage R.A.	Totals
Fee title	199.27	623.95	489.67	170.94	353.13	134.59	1,971.55
Easement	0.0	12.88	0.33	0.0	0.0	0.0	13.21
Totals	199.27	636.83	490.0	170.94	353.13	134.59	1,984.76

Current Use

The waters of this system are very popular trout streams. Fishing pressure for all waters in the system is estimated at 140 hours per acre or approximately 3,170 angler-days per year. Some of the stream thread presently under public ownership supports up to 300 hours per acre. Fishing pressure holds up well throughout the entire fishing season. The catch rate is estimated at 0.4 trout per hour.

The present public ownership lands are located in prime deer range. Waushara County has ranked among the top six counties for years in the registered deer kill during the gun-bow season. Hunting pressure in excess of 50 hunters per square mile of deer range is common on opening weekend of the gun season. Other hunting activity is for waterfowl, grouse, woodcock, rabbits, squirrels, raccoons and foxes. Other recreational activities include picnicking, nature study, berry and mushroom picking, cross-country skiing and snowshoeing. Trapping is an additional public use activity. Pheasants were stocked in the past, but this practice was discontinued. Desirable stocking sites, where at least 320 acres of state land exists on both sides of the release site, do not exist. Without these conditions, state-stocked birds would fly to private lands.

Land Use Classification

The Natural Areas Preservation Council requests that 3 public use natural areas be established within the proposed boundary of the system. They include a 5-acre parcel already acquired, shown as N1 on Figure 3a, on the West Branch, White River. It contains the rare Pasque flower.

Figures 3a and 3b show proposed natural area N2, which totals 140 acres in the Lunch Creek Marsh, which has been acquired. It contains unique marsh flora and is also a nesting area for sandhill cranes. A 25-foot-wide corridor on each side of the stream in this proposed natural area may need mechanical brush removal and treatment of stumps with an EPA-approved herbicide to prevent resprouting, sometime in the future. When brush control work is proposed, a re-evaluation of the status of this natural area will have to be made.

A 25-acre white pine stand on the West Branch, White River was also recommended as a public use natural area. It remains in private ownership. When acquisition occurs it will be considered for classification as a public natural area. All other lands within the boundary will be classified as a fisheries and wildlife area.

MANAGEMENT PROBLEMS

Possible Water Deterioration

Although all waters in the system are Class I for trout, a slow, gradual deterioration in trout habitat will take place without some habitat stabilization, improvement and maintenance activities.

Vegetation Problems

A common problem is dead, dying and leaning trees that have, or will, fall into the river channel. The result is the slow-down of flow, and a change in stream course with subsequent bank erosion and general widening of the channel.

In some areas, problem growth of speckled tag alder form a complete canopy over the stream that shades out aquatic vegetation in the stream. This, in turn, reduces the production of basic trout food organisms (stonefly, mayfly, caddisfly larvae). Bank erosion results from excessive brush growths as grasses and sedges are unable to compete. Lack of suitable trout cover in the form of pool and bank cover restricts production of larger-sized trout.

Beaver Problems

Beaver activity will be a continuing problem on central Wisconsin trout streams. Their dams interfere with trout movement at spawning time, cause siltation, destroy spawning areas and adversely affect the reproduction of fish. Dams materially affect water flow, levels and temperatures. Beaver flowages do contribute to wildlife, furbearers and waterfowl habitat but present Department policy requires that beaver populations be maintained at low population levels on Class I trout waters.

Millpond Dams

There are two dams that affect the waters included in this master plan (West Branch, White River dam and Wautoma Millpond dam). The resulting shallow, silted-in and weedy millponds slow and stop the rapid movement of springwater downstream. The water temperatures of discharge over these dams reached 75-85° during the summer months to the detriment of downstream trout. These dams prevent adult spawners from moving upstream to spawning areas. Additionally, it concentrates spawners that deposit eggs in areas where they won't hatch because the water is near freezing in the winter months. At that temperature level, all trout eggs die.

Groundwater Quality and Supply

There has been documented groundwater pollution resulting from land use practices in central Wisconsin. Man's activities can degrade this fragile resource. Of concern is the storage and widespread use of fertilizer and pesticides in the watershed and the long-term affect on surface flows and the groundwater table that man and all living organisms depend upon for daily survival. Good clean, clear, unpolluted water is the lifeblood of the stream system.

There is concern for the affect on stream flows by pumping water from high capacity wells. It is unknown what long-term effect this will eventually have on the groundwater aquifers that provide the abundant spring water to the stream system.

Illegal Use Activities

There are problems associated with public use areas such as unauthorized overnight camping, loud and rowdy parties and the universal problem of man's habit of littering. Law enforcement has issued several citations involving these activities that help alleviate problems locally.

Carelessness with fires during drought periods is a potential hazard to public and private property. In the past, arson fires have been a problem in central Wisconsin.

High hunter density during the deer-gun season and fisher density in the early part of the season spill over on adjoining private lands causing trespass problems and reduce the quality of the outdoor experience.

From 25 to 33 percent of all Department signs on public areas fall prey to vandals yearly.

Land Use

Platting and subdividing lands for private homes and recreational cottages is a common practice in Waushara County. Some of the stream frontage within the acquisition boundaries, is suitable for this type of development. This, however, is incompatible with Natural Resources Board policy to acquire lands for general public recreational use in or readily accessible to the more heavily populated areas of the state.

Fundings

A lack of funding sources, especially for maintenance activities on Department-owned land is a growing criticism of concerned citizens who live close to state-owned recreational areas. The Department is eventually going to have to allocate more funding for this purpose.

People Responsibility Problems

Some members of the general public that use public fishing and hunting areas are going to have to clean up their act, show more appreciation and respect for public use areas provided for their enjoyment. A little consideration for the other person using these areas and toward adjoining private landowners would go a long way in solving people-use problems on public lands.

RECREATIONAL NEEDS AND JUSTIFICATIONS

There will be future increased emphasis and a need for outdoor recreation by the public in the State of Wisconsin. Any land purchased by the Department is acquired on behalf of the State and is held in public trust for the benefit of the state, its natural resources, and all its citizens as well as for out-of-state visitors. The acquisition and development of public lands in this part of the state will help meet these needs and is essential to energy conservation considerations and reasonably priced public recreational activities in the decades ahead.

By 1990, some recreational opportunities may be limited in central Wisconsin without intensive management or increased acquisition, as indicated in the Wisconsin Department of Natural Resources, Fish and Wildlife Comprehensive Plan, Management Strategies, 1979-1985.

According to the 1982 Wisconsin Blue Book the 1980 population of Waushara County was 18,526 while the population of the immediately adjacent 6 counties totalled 275,482 persons. Creel census checks have documented that people from these population centers are attracted to the quality trout waters located in Waushara County.

Recreational areas, like the one covered in this master plan, are centrally located and comparatively near major metropolitan population centers, including the Fox River Valley (Oshkosh to Green Bay), Madison, Milwaukee and Chicago. At least 3 million people live within a few hours travel time and are only a tank of gas or less away from public recreational areas in Waushara County. Users of the fishery area contribute to the economic welfare of the county, utilizing a variety of merchandisers.

ANALYSIS OF ALTERNATIVES

Do Nothing

If management practices were discontinued, trout habitat would deteriorate over a period of time to the point where stocking of hatchery-reared fish would be necessary to provide short-term fishing opportunities.

The most productive trout streams in central Wisconsin have open marsh meadow type stream edge. This ecological niche will be lost through plant succession. Tag alder will encroach and cause deterioration of the stream channel. There will be a reduction of bank undercuts and pool cover, while silting of spawning areas will reduce egg survival and recruitment of fish.

Excessive shade will reduce aquatic vegetation causing a decrease in invertebrate insect life. Dead and dying trees will fall into the channel altering the flow and cause difficult fishing conditions.

Past investments in land acquisition and development could not be adequately protected because of disjointed land ownerships. Key parcels of land in the fishery system must be controlled to protect, maintain and improve them for future users. Under present State Statutes, administrative rules, regulations, and policy, public ownership is the best way to insure quality water, diverse habitat and good fishing for future generations.

Habitat preservation and improvement activities, such as streambank rip-rap, instream device construction, streambank vegetation control and alleviating chronic upland erosion problems are expensive and private landowners lack incentive to get the work done. The end result would lead to general deterioration of a variety of habitat types.

Subdivisions would eventually result on suitable stream frontage within the boundary, and trespass restrictions would deny the general public suitable fishing frontage and access sites along a popular stream system.

A do-nothing approach would mean increased pressure and public use of the existing areas now under public ownership. Future users would find these areas extremely crowded and the quality of the outdoor experience reduced.

Expand the Boundary to Include System Remnants (Recommended)

Under present Department policies, procedures and legislative mandates, public ownership is the best way to insure quality water, diverse habitat and good fishing for future generations. The Department recommends a transfer of acres to the White River System Fishery Area and combining remnant purchases into the system to best accomplish master plan goals and objectives. Future reviews of this master plan should include a possible revision of acreage goals consistent with any future statewide acreage goals and funding sources necessary to accommodate any projected increases in the demand for recreational areas.

Reduction of the Size of the Fishery Area

Public lands provide untold hours of recreational pursuits for Wisconsin residents, and out-of-state tourists. Attainment of goals and objectives would be impossible if the fishery area was reduced. This would be contrary to this agency's major function of preserving and perpetuating renewable resources and providing user opportunities associated with these resources.

APPENDIX - Comments of outside reviewing agencies to the White River System Master Plan.

During the 45-day review period, a number of persons or agencies outside of the Department responded to the White River System Master Plan. Their comments, and Department responses, where appropriate, are included in this Appendix:

Cynthia A. Morehouse, Director, Bureau of Environmental and Data Analysis, Department of Transportation, Madison

We have reviewed the Master Plan for the White River System Fishery Area in Waushara County. We recommend that when you propose to acquire interests in lands abutting the right of way of highways on the State Trunk Highway System (numbered highways) you coordinate with:

R. O. Schindelholz, Director
Transportation District 4
1681 Second Ave., So.
Wisconsin Rapids, WI 54494
(715) 421-8300

The acquisition of interests in lands abutting township or county highways should be coordinated with the appropriate officials in those levels of government.

DNR Response: We routinely contact the Department of Transportation at Wisconsin Rapids when developing fishery area accesses or whenever acquisition abuts the right-of-way of roads on the State Trunk Highway System. This procedure will continue. We have good working relationships with the County Highway Department.

We support the present DNR policy requiring the maintenance of low beaver population levels on Class I trout waters. Nonetheless we feel that the Master Plan should also cite on page 20 the problems beaver may cause to the proposed fishery area's highways as a co-equal reason for eliminating problem beaver.

Thank you for the opportunity to review and comment on this Master Plan.

DNR Response: Beaver dams located in highway bridge openings are usually reported to the DNR. The Department issues special permits for dam removal and contacts local trappers who trap the beaver out.

Forest Stearns, Chairman, Natural Areas Preservation Council

We have reviewed the concept master plan for the White River Fishery Area and have one recommendation regarding natural areas.

A nice dry-mesic forest type with thrifty white pine is known along the White River in the SW1/4 NW1/4 of Section 9, T18N, R10E. This is the only known natural area within the project boundary. It should be given special consideration in management decisions. We recommend that the most appropriate classification for this 20-30 acre site is public use natural area.

Thank you for providing the opportunity to comment.

DNR Response: Presently, this area is not under state ownership. Priority-wise, it isn't too likely that it will be purchased in fee title in the foreseeable future. If it is ever purchased, special management consideration for a public use natural area will be evaluated.

Mitchell Bent, Chairman, Wisconsin Trout Unlimited, DePere, WI

Overall view of Master Plan: Good

As Chairman for Wisconsin Trout Unlimited, I am pleased to be able to submit input regarding the above-mentioned Master Plan Review. Although these comments will come to you past the 45-day comment period, I ask that they be accepted. Personal problems prevented me from submitting these comments any earlier.

On the whole, Wisconsin Trout Unlimited heartily approves of DNR's proposed plan for the White River Fishery Area. The White River in Waushara County is one of the premier trout waters of central Wisconsin, and it is deserving of utmost attention by DNR.

Wisconsin Trout Unlimited approves of the recommended alternative for the White River Fishery Area, i.e., expansion of the boundary to include system remnants.

Since we can find little in the plan to disagree about, our only other comments related to the Master Plan are these:

1) We encourage DNR to work closely with Trout Unlimited Chapters, particularly the Central Wisconsin Chapter, in formulating habitat improvement programs. Further, we encourage DNR to recommend target funding goals from groups like T.U. for funding stream projects. This will stretch Inland Trout Stamp dollars further around the state, plus it will give local chapters opportunity to participate in the whole stream improvement program.

DNR Response: We have and will continue to work with Trout Unlimited Chapters to protect and where possible, improve habitat conditions. As stated in the Master Plan, Page 8, the Department appreciates the hard working Trout Unlimited groups that have worked on and supported habitat improvement work on central Wisconsin streams.

2) Second, we encourage examination of the problems with the Dahlke Flowage insofar as warmwater releases downstream on the White River. Talks with current Central Wisconsin T.U. Chapter president Robert Heding, Oshkosh, WI 54901, indicate that his chapter has problems with the way the dam is being handled as far as the river downstream from the dam is concerned. There exists great potential for increasing the coldwater fishery area of the White River if that problem were alleviated.

DNR Response: Hydro-electric operations do result in water level fluctuations. No change in current operating procedures are foreseen.

3) As is our custom when commenting on plans involving such fine waters as the White River, we strongly suggest that DNR consider implementation of special regulations for the White River that would restrict trout kill by anglers via reduced creel limits, increased size limits, etc. Such regulations will likely produce increased numbers of trout, especially larger-sized fish, in the river.

DNR Response: No special regulations are anticipated on any waters of the White River System. Natural reproduction, recruitment and growth of trout is satisfactory to support a good sustained fishery under present fishery regulations.

Stanley Nichols, Wisconsin Geological Survey, Madison, WI

Overall view of Master Plan: Good

Page 12 - No mention of the geology of the area. Soils information is very skimpy.

DNR Response: Description given is adequate for a document of this kind.

Page 11, par. 5 - Mixed warm season grasses are suggested for dense nesting cover rather than a monotype of blackwell switchgrass.

DNR Response: Will take this under consideration. DNR wildlife research continues to evaluate the contribution of switchgrass plantings as regards nesting species of waterfowl and upland birds.

Page 20, par. 4 - Dead trees do provide instream cover and local stream security. Methods should be devised to utilize them as a resource rather than trying to remove them.

DNR Response: Agreed. Those that can be rearranged to provide needed cover will be so utilized. However, in some areas where wind falls are blocking water flow, actual removal will continue.

Page 21, par. 1 - Any chance for removal of the mill pond dams?

DNR Response: No, not unless owners apply to abandon them and remove them.

Mark F. Brosseau, Trout Unlimited, Ducks Unlimited, Wisconsin Wildlife Federation, Oshkosh, WI

Overall view of Master Plan: Excellent

I agree with the recommended alternative, to expand the boundary to include system remnants. I would urge that as much quality land as possible be purchased.

DNR Response: Thanks for your support. Be assured that the White River System will have high priority in future acquisition plans.

Page 8, para. 4. - Sharecroppers should be monitored to limit or eliminate the use of fertilizers, herbicides, and pesticides.

DNR Response: We do discourage the overuse of herbicides and pesticides. Fertilizer use is almost a must on most of the very light, sandy-type soils.

Page 8, para. 6. - Why favor white pine? It has very limited wildlife use as far as I know, compared to the other species named.

DNR Response: To add a little diversity to the landscape.

Page 11, para. 4. - A number of knowledgeable people have told me that switchgrass is nearly useless or even counterproductive as nesting cover. If this is so I'm a bit alarmed that 17% of the grass and cropland is planted in switchgrass. Why not try to start an area of 'natural' (native) prairie as an alternative? We all know that monocultures are generally nonproductive of wildlife.

DNR Response: Task Force members are unaware of studies that show switchgrass plantings as useless. All grass types have some usefulness as nesting cover or erosion control. Native prairie grasses are being experimented with. Availability and costs are prime factors associated with seedings of natural (native) grasses.

Is anyone monitoring groundwater quality in the area? This might not be a bad idea considering the amount of human activity in the area and the problems recently encountered close-by.

DNR Response: No groundwater monitoring being done at present, but would suspect such activities will become a reality in the not too distant future. A prime Department objective is the protection of groundwater supplies.

I think everyone would agree that the dams in the area are deleterious. Can anything be done to get rid of them? Thank you for the opportunity to respond.

DNR Response: No. Not as long as owners wish to retain them.

Robert B. Heding, Trout Unlimited, Oshkosh, WI

Overall view of plan: Excellent

Section 1 - Actions. Under Annual Objectives there should be a paragraph on recharging groundwater. The report should contain an objective on land management in which the management of all state lands should be directed towards maximum infiltration of surface waters into the groundwater supply. Maintaining all present open lands in grassland and converting forested lands to grassland where feasible, should be a prime objective. Efforts should be directed at woody vegetation control to reduce evapo-transpiration to enhance groundwater supplies.

DNR Response: Will take this under consideration in future land management plans. The Task Force is not aware of studies that show groundwater infiltration of surface waters is better on grassland vs. forested lands. There is evapo-transpiration from all growing green plants with little infiltration during the growing season.

Page 17 - last paragraph. Is the 4.08 miles in public frontage on Dahlke Flowage correct?

DNR Response: Figure should read 0.41 mile in public frontage on the flowage.